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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,698	11/25/2003	Terrance E. Janssen	315.0001 0101	6282

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EXAMINER

FORD, JOHN K

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/721,698

Applicant(s)

JANSSEN, TERRANCE E.

Examiner

John K. Ford

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/31/05
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 10-12, 20-27, 33-35 and 37-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-19, 28-32 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Applicant's election of Group I, claims 1-21 and 28-39, wound pipe of Figs. 1 and 3, closed system using an intermediate fluid and a heat pump is acknowledged. Claims 1-9, 13-19, 28-32 and 36 have been identified as readable on the elected species. Claims 10-12, 20-27, 33-35 and 37-39 are withdrawn from consideration at this time. Applicant's traverse is acknowledged, but not convincing as the examiner's time is extremely limited. The Examiner, with applicant's cooperation, will rejoin as many claims as can properly depend from any allowed claims, as is applicant's understanding. The restriction/election requirement is made Final.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, 4, 6, 7, 8, 13, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bardenheier (USP 4,782,888) and JP 2002-30717.

Bardenheier teaches a municipal water line 16 with a heat exchanger 14 in thermal contact with the water in the municipal water main 16. The heat exchanger 14 transfers heat to a primary heat transfer liquid (water or water and propylene glycol) circulated in pipe system 11. Individual heat pumps (see col. 6, line 33) can be used to transfer heat from the primary heat transfer liquid to the secondary fluid circulated through pipes 13. This secondary fluid can be FREON (see col. 3 lines 33-40) used to provide heating or cooling to a conditioned space occupied by the user. No details of the actual construction of heat exchanger 14 are disclosed.

Figure 4 of JP '717 discloses a pre-fabricated pipe 2 having a heat exchanger 1 can be inserted into an existing (waste) water pipe 2 (see paragraphs 65 and 76 of the translation describing the installation in Figures 4 and 7, respectively). The heat exchanger 1 transfers heat to a primary heat transfer fluid circulated in pipe 17, which forms a closed circuit. A reversible heat pump 11 provides heating or cooling to load equipment 20.

To have used the pre-fabricated pipe section 2 with heat exchanger tube 1 of JP'717 in place of schematically shown heat exchanger 14 of Bardenheier would have been obvious to avoid the problems disclosed in JP '717, paragraph 6 and 7, incorporated here by reference, and to ease construction as disclosed in JP '717, paragraph 8.

Alternatively, to have used the apparatus of JP 2002-30717 to recover heat from a municipal water supply rather than a waste water source would have been obvious in view of the fact that Bardenheier discloses municipal water "provides an outstanding source or sink of low grade thermal energy" for reasons stated in col. 4, lines 16-36 of Bardenheier, incorporated here by reference. That is, the prefabricated pipe section 2 of JP '717 would have been simply inserted into a new construction or an existing water main, rather than into a new construction or an existing waste water pipe. The water main installation would obviously require increased provisions to prevent contamination of the potable water in the event of a pipe breach, which is probably why most patents in this field prefer wastewater, however, there are clear reasons taught by Bardenheier for why potable water from the mains might be preferable.

Regarding the claimed monitoring equipment, see element 18 of Bardenheier and regarding the claimed "enclosing" structure see heat insulator 3 and protective cover 4 of JP '717.

Claims 5, 16, 28-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 4 and 15 above, and further in view of Fr 2381869 and Sherman.

Fr '869 teaches an enclosure 1 for a water main 5 and a sewer pipe 6 that are essentially of identical construction. A cover 2 is shown that clips into place. To have used such an enclosure to enclose the water main of the prior art would have been obvious to permit easy access for inspection or repair and likewise to have locked it to prevent unauthorized access would have been obvious in view of Sherman.

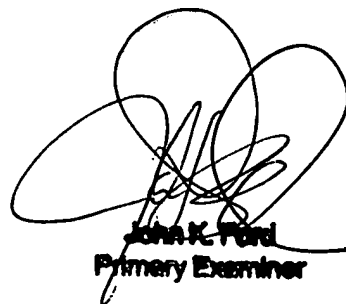
Claims 9, 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1, 14 and 28 above, and further in view of Clancy (USP 2,364,130) or JP 88730 (Fig. 3) or JP 9-229574 (Figs. 3-5).

Clancy disclosed a coil 30 of a somewhat flattened cross-section (col. 3, lines 38-42, "so as to increase the area of contact with the sleeve") that it is helically wound around. Essentially the same disclose is found in the referenced figures in the two Japanese publications. To have flattened the cross-section of the heat exchanger tubing wound around the water pipe as shown in the prior art (JP '717) to increase the contact area and, hence, the heat transfer would have been obvious to one of ordinary skill in the art, in view of these three separate teachings of the same.

Any inquiry concerning this communication should be directed to John Ford at telephone number (571) 272-4911.

Ford/PJ

04/18/05



**John K. Ford**  
**Primary Examiner**